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ABSTRACT

Studies show that metacognitive strategies can increase learning skills and that independent use of these metacognitive strategies can be gradually developed in people. The school library media center is the ideal place for students to learn how to develop metacognitive strategies; that is, they can learn how to connect new information to former knowledge, deliberately select thinking strategies, and plan, monitor, and evaluate these thinking processes. There are six basic strategies for developing metacognitive behaviors in students: (1) they must consciously identify what they "know" as opposed to "what they don't know"; (2) they must then develop a thinking vocabulary so that they can verbally describe their thinking processes; (3) they should keep a thinking journal or learning log in which they reflect upon their learning processes; (4) they must also learn how to assume responsibility for regulating their learning activities, including estimating time requirements, organizing materials and scheduling the procedures necessary to complete an activity (the media center's resources lend themselves quite well to this task); (5) they must learn how to review and evaluate these strategies as either successful or inappropriate; and (6) they must participate in guided self-evaluation through individual conferences and checklists focusing on the thinking process. Metacognitive environments must be established in schools if teachers and media specialists are to be able to encourage students' development of problem-solving and learning skills. (4 references and 4 additional readings) (MAB)

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DEVELOPING METACOGNITION

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Developing Metacognition

by Elaine Blakey and Sheila Spence •

Metacognition is thinking about thinking, knowing "what we know" and "what we don't know." Just as an executive's job is management of an organization, a thinker's job is management of thinking. The basic metacognitive strategies are:

1. Connecting new information to former knowledge.
2. Selecting thinking strategies deliberately.
3. Planning, monitoring, and evaluating thinking processes. (Dirkes, 1985)

A thinking person is in charge of her behavior. She determines when it is necessary to use metacognitive strategies. She selects strategies to define a problem situation and researches alternative solutions. She tailors this search for information to constraints of time and energy. She monitors, controls and judges her thinking. She evaluates and decides when a problem is solved to a satisfactory degree or when the demands of daily living take a temporary or permanent higher priority.

Studies show that increases in learning have followed direct instruction in metacognitive strategies. These results suggest that direct teaching of these thinking strategies may be useful, and that independent use develops gradually (Scruggs, 1985).

Learning how to learn, developing a repertoire of thinking processes which can be applied to solve problems, is a major goal of education. The school library media center, as the hub of the school, is an ideal place to integrate these types of skills into subject areas or students' own areas of interest. When life presents situations that cannot be solved by learned responses, metacognitive behavior is brought into play. Metacognitive skills are needed when habitual responses are not successful. Guidance in recognizing, and practice in applying, metacognitive strategies, will help students successfully solve problems throughout their lives.

Strategies for Developing Metacognitive Behaviors

1. Identifying "what you know" and "what you don't know."

At the beginning of a research activity students need to make conscious decisions about their knowledge. Initially students write "What I already know about . . ." and "What I want to learn about . . . ." As students research the topic, they will verify, clarify and expand, or replace with more accurate information, each of their initial statements.

2. Talking about thinking.

Talking about thinking is important because students need a thinking vocabulary. During planning and problem-solving situations, teachers should think aloud so that students can follow demonstrated thinking processes. Modeling and discussion develop the vocabulary students need for thinking and talking about their own thinking. Labelling thinking processes when students use them is also important for student recognition of thinking skills.

Paired problem-solving is another useful strategy. One student talks through a problem, describing his thinking processes. His partner listens and asks questions to help clarify thinking. Similarly, in reciprocal teaching (Palinscar, Ogle, Jones, Carr, & Ransom, 1986), small groups of students take turns playing teacher, asking questions, and clarifying and summarizing the material being studied.

3. Keeping a thinking journal.

Another means of developing metacognition is through the use of a journal or learning log. This is a diary in which students reflect upon their thinking, make note of their awareness of ambiguities and inconsistencies, and comment on how they have dealt with difficulties. This journal is a diary of process.

4. Planning and self-regulation.

Students must assume increasing responsibility for planning and regulating their learning. It is difficult for learners to become self-directed when learning is planned and monitored by someone else.

Students can be taught to make plans for learning activities including estimating time requirements, organizing materials, and scheduling procedures necessary to complete an activity. The resource center's flexibility and access to a variety of materials allows the student to do just this. Criteria for evaluation must be developed with students so they learn to think and ask questions of themselves as they proceed through a learning activity.

5. Debriefing the thinking process.

Closure activities focus student discussion on thinking processes to develop awareness of strategies that can be applied to other learning situations.

A three step method is useful. First, the teacher guides students to review the activity, gathering data on thinking processes and feel-

ings. Then, the group classifies related ideas, identifying thinking strategies used. Finally, they evaluate their success, discarding inappropriate strategies, identifying those valuable for future use, and seeking promising alternative approaches.

6. Self-Evaluation.

Guided self-evaluation experiences can be introduced through individual conferences and checklists focusing on thinking processes. Gradually self-evaluation will be applied more independently. As students recognize that learning activities in different disciplines are similar, they will begin to transfer learning strategies to new situations.

Establishing the Metacognitive Environment

A metacognitive environment encourages awareness of thinking. Planning is shared between teachers, school library media specialists, and students. Thinking strategies are discussed. Evaluation is ongoing.

In the creation of a metacognitive environment, teachers monitor and apply their knowledge, deliberately modeling metacognitive behavior to assist students in becoming aware of their own thinking.

Metacognitive strategies are already in teachers' repertoires. We must become alert to these strategies, and consciously model them for students.

Problem-solving and research activities in all subjects provide opportunities for developing metacognitive strategies. Teachers need to focus student attention on how tasks are accomplished. Process goals, in addition to content goals, must be established and evaluated with students so they discover that understanding and transferring thinking processes improves learning.

In this rapidly changing world, the challenge of teaching is to help students develop skills which will not become obsolete. Metacognitive strategies are essential for the twenty-first century. They will enable students to successfully cope with new situations. Teachers and school library media specialists capitalize on their talents as well as access a wealth of resources that will create a metacognitive environment which fosters the development of good thinkers who are successful problem-solvers and lifelong learners.

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